

54 Regents Park Road, NW1 7SX

Basement Impact Assessment (BIA)

Addendum to Stage 1, (Screening) :

Response to queries Raised.

Job No: 142297

Report Number: 142297-Form BIA (Stage1) Addendum

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Introduction

The following Addendum document is in response to the recent BIA Audit tracker conducted by Campbell Reith Ref 12066-48, revision D1 and is an addendum to the Stage 1 screening report issued March 2015.

Query 1 – Stability

Query – No assessment of ground movements associated with underpinning and potential building damage. Scheme shown described as superseded.

- Response –The proposals are to lower the existing floor slab at lower Ground floor level to give an increase of 600mm head-room to allow for an insulated floor slab and services ceiling zone with a reasonable head room. The work involves a relatively small height of underpinning excavation required (approx. 1.4m from existing footing to formation level) to lower the basement slab in what is a traditional and straightforward operation. The mass concrete underpins will be constructed in a hit and miss sequence to keep movement within tolerable limits and this is traditionally 1m width. Once the underpinning concrete is cast to within 75mm of the sound masonry, the remaining gap is then dry packed. With this approach movement will be minimal and will limit category of movement to Category 0-1.
- The reference to scheme being “superseded” can be dis-regarded. Full CAD versions of the underpinning sketches are shown in the Appendix K and reflect the principals of the schematic hand drawings.

Query 2 – Stability

Query – No reference to whether neighbouring properties have basements.

- Response – Nos. 52 and 56 Regents Park Road both appear to have lower ground floor levels. However, information from the trial pit logs conducted by AVIRON indicates no evidence that the floor levels are lower; therefore no basements are expected. Due care will need to be taken by the ground-worker when excavating for the underpinning and the engineer will be making regular inspections during work to check all works are in accordance with the specification and good practice. An inspection will also be made by the party wall surveyors in preparation for the schedule of conditions that normally takes place as part of the party wall award process, this will highlight any potential basement structures that may be present that we are not aware of.

Query 3 – Groundwater

Query – Neighbouring residents suggest No. 50 Regents Park Road had basement level reduced and requires constant pumping. BIA suggests winter groundwater level to be established.

- Response – Seasonal variations in the perched ground water level are to be expected and this can dealt with in a traditional approach during excavation. The ground water levels have been checked on 6th October 2015 by Aviron who carried out the original site investigation. Their results summarised are as follows and follow heavy rain London this afternoon:
- *Depth to water :1.21m below ground level (bgl), Depth to base of well 4.97m bgl. Testing completed following period of heavy rain. Garden overgrown. Ground conditions unproductive strata of London Clay Formation. Surface water may migrated into the monitoring well having breached the bentonite seal following a dry summer which may have dried out seal/surrounding clay creating pathway for migration . Unlikely a mobile and free body of water exists beneath the site given the aquifer status (unproductive strata) and the initial monitoring data ('dry' @ 5.0m bgl on 17/03/15 and @ 3.40m bgl on 16/04/15).*
- A cavity drain system has been proposed to prevent any groundwater ingress into the basement area and this will be designed for the site specific conditions by the specialist. The volume of water is not expected to be significant.

Query 4 – Stability

Query – No proposal for condition surveys and outline structural monitoring plan provided.

- Response – The schedule of conditions are to be taken as part of the Party Wall Act process which normally happen after the planning process. Both adjoining properties will be surveyed by chartered surveyors to record any existing defects and this will act as a record of the condition of each adjacent building before works underpinning works commence at 54 Regents Park Road.
- Response- Structural movement is expected to be minimal for the relatively small depth of excavation proposed with the techniques being used. From experience a Category of Damage is 0-1 is to be expected.

Refer to Burland (2001) table extract below for description of the damage categories.

Table 2.5 *Classification of visible damage to walls (after Burland et al, 1977, Boscardin and Cording, 1989; and Burland, 2001)*

Category of damage	Description of typical damage (ease of repair is underlined)	Approximate crack width (mm)	Limiting tensile strain ϵ_{lim} (per cent)
0 Negligible	Hairline cracks of less than about 0.1 mm are classed as negligible.	< 0.1	0.0–0.05
1 Very slight	<u>Fine cracks that can easily be treated during normal decoration.</u> Perhaps isolated slight fracture in building. Cracks in external brickwork visible on inspection.	< 1	0.05–0.075

- Response- Monitoring of Movement, outline statement is as follows

The statement below explains the procedure intended for monitoring movement during construction. It adopts a traffic light system to rank the level of movement.

The contractor is to submit monitoring movement proposals:

Green/Amber Trigger Levels shall be 5mm in any plane x, y or z.

Amber/Red Trigger Levels shall be 10mm.

If amber trigger levels are met the frequency of the surveying shall increase to confirm that any movement has stopped whilst considering and preparing to implement any additional propping or change in methodology.

Amber level is to be set at 5mm and Red level to be set at 10mm, if either level is reached the project engineer will need to be notified immediately.

If amber is reached the project engineer will visit site to establish if the cause is due to contractor's construction method or if it is due to soil movement. If it is due to contractor's work method, this will be revised. If it is due to soil movement the geotechnical specialist will be notified and the bearing stresses re-evaluated. Works will continue however monitoring intervals will be halved until movement is confirmed below amber level.

If red levels are reached all works are to stop immediately and the project engineer will visit site. An inspection is carried out to the neighbouring property to assess what, if any damage has occurred which will be rectified as outlined in the party wall awards. The project engineer will visit site to establish if the cause is due to contractor's construction method or if it is due to soil movement. If it is due to contractor's work method, this will be revised. If it is due to soil movement the geotechnical specialist will be notified and the bearing stresses re-evaluated. Once a revised regime is established and agreed between the project engineers, the checking engineer and the appointed party wall surveyors works will continue however monitoring intervals will be halved until movement is confirmed below Red level.

End.